UNIT OBJECTIVES

- discuss the potential uses of robots in everyday life
- talk about developments in artificial intelligence
- acknowledge arguments and propose counterarguments
- write an essay about AI in our homes
- present a proposal for a robot helper

ROBOT REVOLUTION

1

START SPEAKING

A   Look at the picture. What does it suggest about the future? Do you think it's a realistic vision of the future? Why or why not?

B   In what ways do you think technology will change our lives in the future? What kinds of things (wearable technology, personal robots, AI, etc.) do you imagine we'll have in the next 20 years? The next 40 years? In 100 years?

C   What kinds of robots do we already use? Do you think robots are a positive invention in general? Why or why not? For ideas, watch Eric's video.

EXPERT SPEAKER

What examples can you think of to support Eric's argument and to counter it?

1.1 THE ROBOT TOUCH

LESSON OBJECTIVE
■ discuss the potential uses of robots in everyday life

1 LANGUAGE IN CONTEXT

A 🔊 **1.02** **PAIR WORK** **THINK CRITICALLY** What does the robot in the ad look like? What, and who, do you think it's for? What can it do? What can it probably <u>not</u> do? Listen to the infomercial and check your answers.

🔊 **1.02 Audio script**

The MiRo robot may look like a toy, but it is far from it. MiRo is a sophisticated piece of robotic engineering, and it is about to **radically** change the field of home health care.

Though still under development, MiRo will **ultimately** be part of a complex system of sensors and communication networks that will **demonstrably** improve the quality of life for elderly people. MiRo robots will live with their owners 24/7, learn their routines, and monitor their movements, which should **drastically** reduce accidents in the home. They will be able to talk to their owners, as well – reminding them to take their medicine and helping them manage appointments and remember visitors' names. And if there's a medical emergency, MiRo will be able to call for help immediately.

Home health care alternatives are **inevitably** going to become a necessity for countries like Japan and the United States, which are facing the challenge of caring for a **progressively** aging population. Social services will certainly not be able to offer human care and companionship for everyone. Although robot companions are bound to be met with resistance initially, robots like MiRo will **undoubtedly** ease the burden on overstretched social services. The greater benefit, however, will be to the elderly people they serve, who often suffer from loneliness and isolation.

MiRo could **feasibly** revolutionize elder care, making the lives of our senior citizens easier, safer, and far more enjoyable.

INTRODUCING
MiRo!

CLICK HERE
TO ORDER YOURS TODAY!

Courtesy of Consequential Robotics

2 VOCABULARY: Using adverbs to add detail

A 🔊 **1.03** Look at the **bold** adverbs in the script. Which refer to the way something is done (manner)? Which ones are a comment on the action by the speaker (commenting)? Make a chart like the one below and put them in the correct category. Add the other adverbs from the box below. Then listen and check.

| comprehensively | dramatically | gradually | increasingly |
| markedly | potentially | unquestionably | |

Adverbs of manner	Commenting adverbs
radically	ultimately

B ▶ Now go to page 141. Do the vocabulary exercises for 1.1.

C **PAIR WORK** **THINK CRITICALLY** Apart from the elderly, who might benefit from having a robot companion? Why? What problems could it solve? What problems might it create?

2

3 GRAMMAR: Commenting adverbs with future forms

A **Read the sentences in the grammar box. Circle the correct options to complete the rules.**

> **Commenting adverbs with future forms**
>
> MiRo **will undoubtedly ease** the burden on overstretched social services.
>
> Home health care alternatives **are inevitably going to** become a necessity.
>
> Social services **will certainly not be able to** offer human companionship for everyone.

1 Adverbs of manner can be placed in different positions depending on what they modify. Commenting adverbs, when used with future forms, are usually placed …

- [1]**before** / **after** the modal verb *will*.
- [2]**before** / **after** negative words such as *not* and *never*, or negative contractions such as *won't* and *aren't*.
- [3]**before** / **after** the verb *be* in the phrases *be going to*, *be about to*, and *be bound to*.

B ▶ **Now go to page 129. Look at the grammar chart and do the grammar exercise for 1.1.**

FIND IT

C **PAIR WORK** **Look at the commenting adverbs in the box below. Use a dictionary or your phone to look up ones you don't know. Then add commenting adverbs to the sentences so that they reflect your opinion. Compare with your partner.**

certainly	clearly	eventually	evidently
inevitably	surely	undoubtedly	unfortunately

1 This century will become the age of the robot.

2 Robots are going to change the way we live over the next few decades.

3 Robots will never be able to replace the human touch.

4 Robots are bound to take over for humans in a lot of different areas.

5 The robotics industry is about to make life a lot easier for all of us.

4 SPEAKING

A **GROUP WORK** **THINK CRITICALLY** **Imagine a robot assistant for the following jobs. What tasks do you think it could feasibly take on? Would it do those tasks better, worse, or as well as a human? What tasks would the human still have to do? Use commenting adverbs to make your attitudes clearer.**

- a clerk in a hotel
- a nurse in a hospital
- a teacher in a kindergarten

> As a hotel clerk, a robot will undoubtedly be more accurate than a human. It might even be friendlier!

B **As a class, share the most interesting uses for a robot assistant that your group came up with. Then discuss whether robot assistants are inevitable. Give reasons to support your opinion.**

1.2 THE WONDERFUL WORLD OF AI

LESSON OBJECTIVE
- talk about developments in artificial intelligence

1 LANGUAGE IN CONTEXT

A **How would you define *artificial intelligence*? Does the idea scare you, worry you, or excite you? Why or why not?**

B 🔊 **1.04** **Listen to part of a podcast interview in which a tech industry reporter talks about developments in AI. How will AI be used in the near future? How does the host feel about these uses?**

🔊 **1.04 Audio script**

Reporter	Industry experts predict that, by the end of the next decade, **chatbots** will have replaced humans in all customer service call centers, but you won't even know you're talking to one. **Computer-generated speech** will have improved so much that chatbots will sound just like humans.
Host	We'll be having conversations with computers and not even know it? Impressive.
Reporter	Plus, researchers are developing an app to help blind people "see." It will use the camera on their smartphone to capture the area around them. Then, using a combination of **image-recognition** software and **speech to text**, the app will convert the images into speech. Developers are integrating **facial recognition**, too, so the app can announce when a friend is approaching. They have a **working prototype** now, and they're pretty confident they will have developed a **beta version** for testing by the end of next year!
Host	What a great use of technology! What other developments can we expect to see soon?
Reporter	Facial-recognition glasses – they'll be linked to police databases to help pick out suspects in a crowd.
Host	Really? I'm not sure how I feel about that one.

C **PAIR WORK** **THINK CRITICALLY** **Why does the host feel nervous about the police using facial-recognition glasses? What are some other possible uses for that technology? What pros and cons can you think of?**

2 VOCABULARY: Talking about developments in technology

FIND IT

A 🔊 **1.05** **PAIR WORK** **Look at the technology terms in the box. Write them in the chart for all the things they are associated with. Use a dictionary or your phone to help you. Listen and check.**

artificial intelligence (AI)	beta version	chatbot	facial recognition
computer-generated speech	computer translation	image recognition	operating system (OS)
virtual assistant	voice activation	voice recognition	working prototype
text to speech / speech to text			

Home computers	Smartphones	Airport security	App development	Social media
OS	chatbot	facial recognition		

B **PAIR WORK** **Which item from the box above is not yet commonly used? How long do you think it will be until it is part of daily life?**

C ▶ **Now go to page 141. Do the vocabulary exercises for 1.2.**

3 GRAMMAR: Future perfect and future continuous

A Read the sentences in the grammar box. Circle the correct options to complete the rules.

> **Future perfect and future continuous**
>
> By the end of the next decade, chatbots **will have replaced** humans in call centers.
>
> We**'ll be having** conversations with computers and not even know it?

1 Use the future perfect and the future continuous to …
- **a** describe situations in the future.
- **b** make suggestions for things to do in the future.

2 Use *will + have* + past participle (future perfect) to talk about …
- **a** actions that will be in progress at a given time in the future.
- **b** actions that will be completed before a given time in the future.

3 Use *will + be* + verb + *-ing* (future continuous) to talk about …
- **a** actions that will be in progress at a given time in the future.
- **b** actions that will be completed before a given time in the future.

B ▶ **Now go to page 129. Look at the grammar chart and do the grammar exercise for 1.2.**

C PAIR WORK **You are going away this weekend to an unfamiliar location. A friend asks you a lot of questions about your trip. Use the prompts to write the questions in either the future perfect or the future continuous, and check your accuracy. Compare with a partner.**

1 a How / travel / there ?

  How will you be traveling there?

b Who / meet / there ?

c What activities / do ?

2 a By the time the weekend is over, who / speak to ?

b What / see ?

c What / do ?

> ✓ **ACCURACY** CHECK
>
> **Remember not to change the form of *be* in future continuous.**
>
> *It'll ɨs raining by the time we get there.* ✗
> *It'll be raining by the time we get there.* ✓

D PAIR WORK **Answer the questions in exercise 3C and create a story about your weekend trip to tell your partner. Share your stories with another pair of students.**

4 SPEAKING

A GROUP WORK **Make a list of ten machines and gadgets you have in your home right now. How does each one help you or make life easier? Which of them do you think you'll still be using ten years from now? Will you be operating them, or will they depend on AI? For ideas, watch Eric's video.**

EXPERT SPEAKER

How similar are your predictions to Eric's?

B **What ordinary tasks or common devices today will have been replaced by AI by the year 2050?**

> *I think facial-recognition technology will have replaced house and car keys long before 2050!*

5

1.3 I GET WHAT YOU'RE SAYING …

LESSON OBJECTIVE
- acknowledge arguments and propose counterarguments

1 LISTENING

A Read the text message exchange. What is the relationship between the two texters? Why do you think that?

B 🔊 **1.06** **LISTEN FOR ATTITUDE** Listen to a conversation between two friends, Jeff and Dani. What does Jeff think of Dani's new app?

C 🔊 **1.06** **LISTEN FOR MAIN POINTS** Listen again and take notes on the positive and negative points they make about chatbots. Compare answers with a partner.

Positive: _____

_____

Negative: _____

_____

D **PAIR WORK** **THINK CRITICALLY** Look back at exercise 1A. Are you surprised that this is actually a chatbot conversation? Do you think computers will ever be able to understand and develop emotions? Why or why not?

2 PRONUNCIATION: Listening for contrastive stress

A 🔊 **1.07** **PAIR WORK** Listen. Pay attention to the <u>underlined</u> words. Why are they stressed?

Jeff But it looks like a conversation with a <u>friend</u>.

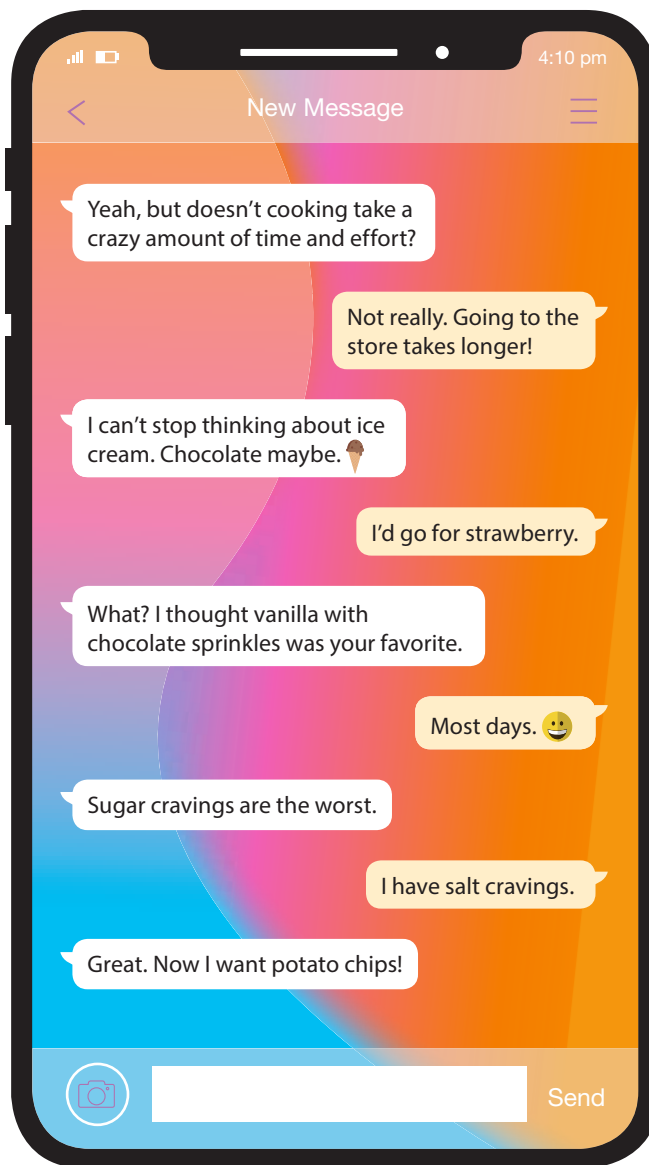**Dani** Well, yeah, that's the point. It's a <u>virtual</u> friend.

Jeff You mean a virtual <u>assistant</u>?

B 🔊 **1.08** <u>Underline</u> the words that have contrastive stress. Listen and check. Practice saying the sentences with your partner. Focus on word stress.

1 You have your own, personal talking machine – a learning machine!

2 I mean, why did they design it? Who did they design it for?

3 You can't always be there for me, but my bot can.

4 You're starting to talk about this bot as if it were a real person.

C Circle the correct words to complete the sentence.
When we want to clarify or correct what has been said, we often emphasize the word with the [1]*new / old* information and use a [2]*lower / higher* pitch.

New Message 4:10 pm

Yeah, but doesn't cooking take a crazy amount of time and effort?

Not really. Going to the store takes longer!

I can't stop thinking about ice cream. Chocolate maybe. 🍦

I'd go for strawberry.

What? I thought vanilla with chocolate sprinkles was your favorite.

Most days. 😀

Sugar cravings are the worst.

I have salt cravings.

Great. Now I want potato chips!

Send

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3 SPEAKING SKILLS

A 🔊 **1.06** Listen to Jeff and Dani's conversation again. Check (✓) the expressions in the chart that they use.

> **Acknowledging arguments and proposing counterarguments**
>
> ☐ 1 **I can see how** that might be interesting, but …
> ☐ 2 **I understand what you're saying**, but I still don't get it.
> ☐ 3 **It's a valid point**, … but consider the other side.
> ☐ 4 **You have a good point** there.
> ☐ 5 **I get where you're coming from**, but …
> ☐ 6 **I hadn't really thought of it like that**. I guess you're right.
> ☐ 7 **I guess so**, but I'm still not convinced.
> ☐ 8 **You could look at it that way**, but that doesn't mean …

B Look at the expressions in the chart. Why does the speaker say the **bold** words? What purpose do they serve? What word is used to introduce a counterargument?

C **GROUP WORK** One student reads the statement. The person to their left acknowledges it and offers a counterargument. The next person to the left responds, etc. Change roles and start again. Use different phrases.

Statement: I don't think machines will ever be more intelligent than human beings.

> I hear what you're saying, but I think they can be better than us in some specific tasks.

> I get where you're coming from, but …

4 PRONUNCIATION: Saying expressions to show a counterargument

A 🔊 **1.09** Listen to the expressions and pay attention to the intonation. Then circle the correct words to complete the sentence below.

I understand what you're saying, but I still don't get it.   I know, I know, and it's a valid point.

Use a [1]*fall-rise / falling* intonation to show you question the other speaker's argument and a [2]*fall-rise / falling* intonation to say what you think is true.

B 🔊 **1.10** Listen to the expressions. Check (✓) the ones where intonation suggests that the speaker is going to introduce a counterargument.

☐ 1 I guess so   ☐ 4 That may be true
☐ 2 I get where you're coming from   ☐ 5 I can see how that might work
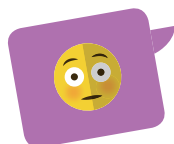☐ 3 You could look at it that way

C **GROUP WORK** Does technology always make life easier? Why or why not? Use the phrases in exercise 4B to introduce counterarguments with appropriate intonation in your discussion.

5 SPEAKING

A **PAIR WORK**   **THINK CRITICALLY** Choose one of the statements and argue both sides of it. Acknowledge your partner's arguments and propose counterarguments.

- A good friend is always there for you.
- We spend far too much time in front of screens.
- Travel broadens the mind.

B Report back on your discussion. Summarize the arguments you were able to put forward in the time you had.

1.4 ROBOTICS TO THE RESCUE

LESSON OBJECTIVE
- write an essay about AI in our homes

1 READING

A **PREDICT CONTENT FROM PICTURES** Look at the pictures. Discuss how robots or robotics are being used in each situation to help humans. Read the article. Match the pictures to the correct sections.

ROBOTS AND HUMANS WORKING TOGETHER

When we think of robots, we often think of movies where humans have lost control and robots have taken over. But in reality, it isn't "us against them." Robots are helpmates in the workplace – more R2D2 than replicant!

Long-distance operations ___

For centuries, the mining industry has been dangerous work. More lives are lost and more workers are injured than in any other private industry. That's why engineers are working with robots to make mining safer. They're bringing the miners up to the surface and sending machines underground. The hope is that the death toll will have been reduced to zero in 20 years.

A great example of this effort is in the searing heat and dust of the red desert of western Australia. Here, robotics, AI, and satellite technology combine to allow engineers to control mining operations from the comfort of an office in Perth – 750 miles away. Driverless trucks, automated drilling machines, and complex logistical programs can all be run from a distance with minimal human intervention on the ground and no risk of injury or death.

They've got our backs ___

In the United States, tens of thousands of manufacturing workers are injured every year. They often perform the same physical tasks over and over, which causes strain to back, neck, and knee muscles and can lead to permanent disabilities. Millions of days of work are lost every year because of injuries. But robots – or more precisely, robotics – are helping reduce these figures.

Exosuits, or robotic vests, are being adopted for jobs that include heavy, repetitive work. In car manufacturing plants, for example, exosuits gently support the necks, backs, and shoulders of workers as they reach up into the engines of cars on the production line overhead. Watching the suit in action is truly amazing. It moves with the wearer and takes all the weight and strain of the manual work. Exosuits allow people to work more comfortably, which means they take fewer breaks and make fewer mistakes. One company estimates that the suits have increased productivity by 85%.

A helping hand ___

The service industry is introducing robots to provide, ironically, more personalized service. In some hotels in Japan, a robot helps out at reception. It greets guests and can translate requests in a number of different languages. It guides guests to their room and delivers messages, leaving human clerks free to deal with more complex transactions.

In the next 10 to 20 years, automation in dangerous jobs will have become the norm. Exosuits will have become common on the factory floor, no one will be left waiting at a hotel reception desk, and manufacturing workers will never again complain of a bad back!

B **READ FOR DETAIL** Read the article again. What are the three main ways that robots are used? What kind of technology does each one require?

C **READ FOR ATTITUDE** The editor of this article wants a new title that introduces the main topic, draws in readers, and also indicates the writer's attitude (skeptical, optimistic, neutral). Share your ideas with the class. Choose the best title.

D **GROUP WORK** **THINK CRITICALLY** Can you think what the disadvantages might be for each use? How do you think the article might present the topic differently if it were written by a member of a labor union?
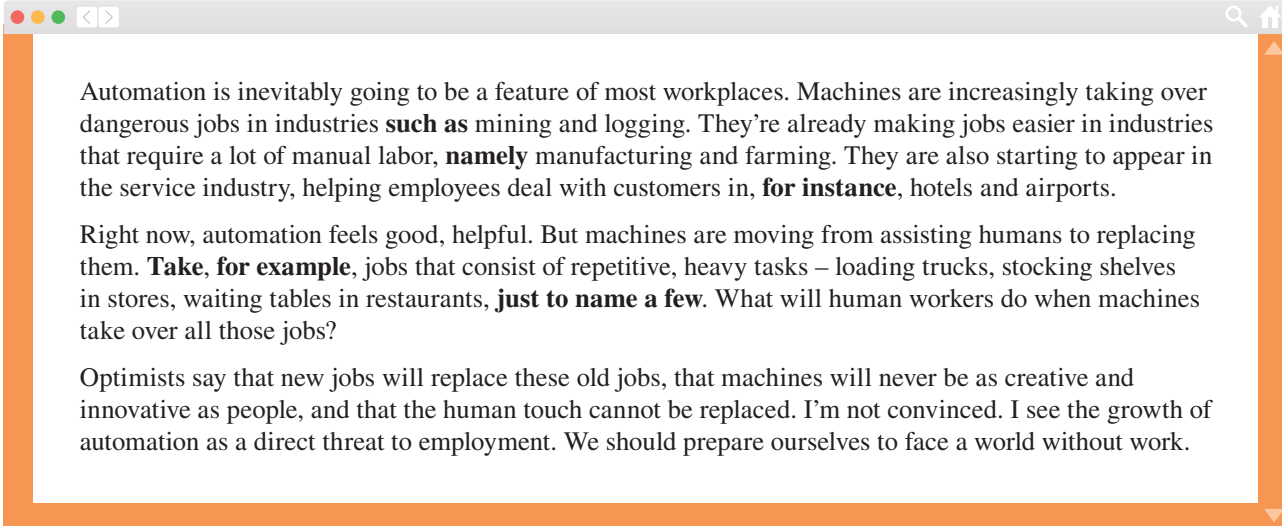
INSIDER ENGLISH

I've got your back. = I'm ready and willing to help or defend you.

8

2 WRITING

A **Read the essay. Which statement is it responding to? How do you know?**

Robots are stealing our jobs.   Robots will make workplaces safer.   Robots will eventually do creative work.

Automation is inevitably going to be a feature of most workplaces. Machines are increasingly taking over dangerous jobs in industries **such as** mining and logging. They're already making jobs easier in industries that require a lot of manual labor, **namely** manufacturing and farming. They are also starting to appear in the service industry, helping employees deal with customers in, **for instance**, hotels and airports.

Right now, automation feels good, helpful. But machines are moving from assisting humans to replacing them. **Take**, **for example**, jobs that consist of repetitive, heavy tasks – loading trucks, stocking shelves in stores, waiting tables in restaurants, **just to name a few**. What will human workers do when machines take over all those jobs?

Optimists say that new jobs will replace these old jobs, that machines will never be as creative and innovative as people, and that the human touch cannot be replaced. I'm not convinced. I see the growth of automation as a direct threat to employment. We should prepare ourselves to face a world without work.

B **EXEMPLIFY ARGUMENTS** **Look at how the bold expressions in the essay are used to refer to examples. Then write sentences using the prompts below. Use a different expression each time.**

1 robots / dangerous tasks / working underground

   Robots will be able to take over dangerous tasks such as working underground.

2 exosuits / different settings / car manufacturing and hardware stores

3 robots / tasks / offering simultaneous translation and greeting guests

4 job loss / in key industries / construction and transportation

REGISTER CHECK

In informal writing and speaking, *like* can also introduce examples.

*I use my virtual assistant for stuff **like** reminders, shopping lists, looking something up online, playing music.*

WRITE IT

C **PLAN** **Read the statement below. Do you agree or disagree with it? What examples can you think of to support your opinion? What counterarguments can you imagine? Take notes.**

Artificial intelligence is going to take over our homes.

D **PAIR WORK** **Look again at the essay in exercise 2A and match each paragraph with its function.**

Paragraph 1: ____   **a** Present argument(s)

Paragraph 2: ____   **b** State a personal opinion

Paragraph 3: ____   **c** Describe the current situation

Organize the ideas from your notes in the same way. Then work together to write a three-paragraph essay in about 200 words.

E **GROUP WORK** **In small groups, read each other's essays. What are some of the most interesting examples people used? Which examples do you think are the most effective in supporting their argument? Why?**

9

CAMBRIDGE

1.5

TIME TO SPEAK
Professor Robot?

LESSON OBJECTIVE
- present a proposal for a robot helper

A   **DISCUSS**   With one or two partners, look at the pictures. What is happening in each one? How might a robot helper improve the situation? Could a robot replace the human in any of them?

B   **PREPARE**   Choose one of the scenarios in the pictures (or a similar situation that you know about). Work together to create a proposal for a robot helper. Follow the steps below.

Step 1   Identify the main problem(s). Outline the tasks your robot will perform to address them and the technology required.

Step 2   Consider the social and psychological effects of a robot helper. What external appearance should the robot have to blend in with the environment?

Step 3   Prepare your proposal. Decide which features to emphasize, the order in which to present them, and who talks about what.

C   **PRESENT**   Share your proposal with the class. As you listen to the others, take notes and write at least one question to ask about each proposal.

D   **AGREE**   Discuss the proposals you have heard with students from other groups. Answer the questions.

- Which robot design do you think is the most practical?
- Which one(s) might be possible to make today?
- Which idea would you be most likely to invest your own money in? Why?

E   Share your ideas as a class. Do you all agree? If you had to choose one of the robot helpers to invest in as a class, which one would it be?

USEFUL PHRASES

DISCUSS

A robot could certainly … as well as a person, but maybe not …

Once … , people won't … anymore.

PREPARE

It's going to need to be able to …

In order to … , it'll need …

PRESENT

We believe people will gradually …

With better AI, our robot could feasibly …